A NEW PERENNIAL SPECIES OF *ECHINOCHLOA* FROM NEW GUINEA

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ABSTRACT

Michael, P. W. (Department of Agronomy and Horticultural Science, University of Sydney, New South Wales, Australia, 2006) 1980. A new perennial species of Echinochloa *from New Guinea. Telopea 2 (1): 31–33.—Echinochloa praestans* Michael is described and brief observations are made on differences between this species and *E. polystachya* (H.B.K.) Hitchc., *E. stagnina* (Retz.) Beauv., *E. pyramidalis* (Lam.) Hitchc. et Chase and *E. picta* (Koen.) Michael.

J. R. Reeder (1948: 278) noted that plant specimens from New Guinea which he chose to include under *Echinochloa stagnina* (Retz.) Beauv. were more robust than usual for the species. Recent examination of perennial species of *Echinochloa* from much of the sub-tropics and tropics has enabled me to separate plants known as *E. stagnina* in Malesia and Papuasia into three distinct taxa—namely, *E. stagnina* s. str.; *E. picta* (Koen.) Michael in Philippine Journal of Weed Science *5*: 18 (1978); and the species from New Guinea now described.

Echinochloa praestans *Michael*, **sp. nov.**

Gramen perenne saepe fluitans. Culmi erecti robusti usque ad 3.6 m alti. Laminae foliorum summorum usque ad 20 mm latae. Ligulae omnes dense longeque ciliatae. Paniculae usque ad 50 cm longae, ramis scabridis non nisi prope basin setosis. Spiculae 3.5–4 mm longae, ovato-oblongae cuspidatae vel aristatae, glumis et lemmate inferiore praeter nervos breviter paucispinulosos puberulis interdum glabris. Flosculus inferior masculinus.

Holotype: Papua New Guinea: Central Province: c. 3 miles N of Hisin village, Kairuku sub-province on edge of permently inundated swamp in open grassland, alt. 10 ft, up to 2 m tall, local name Nou (Maiva language, Hisiu) *P. J. Darbyshire 815*, 16.8.1962 (CANB 113411). Isotypes: BO, BRI, GH, PNH, US. Parts of the Type Collection (not seen): A, BH, K, L.

Perennial, up to 3.6 m high from long-creeping and copiously rooting rhizomes, more or less aquatic. Culms geniculately ascending, rooting and frequently branching from the submerged nodes, stout, up to 12 mm in diameter, many noded, sheathed throughout or some of the internodes at length exserted, smooth, glabrous. Nodes subglabrous. Sheaths mostly terete, rather loose, smooth to scabrid, usually glabrous, rarely pubescent or silky-hairy at the lower nodes, usually more or less ciliate or bearded at the orifice, the basal often spongy and up to more than 15 cm long. Ligules of all leaves a fringe of rather long stiff hairs up to 5 mm long. Blades linear from a slightly attenuated or rounded base, long tapering to a fine firm point, 30–50 cm long, 10–30 mm broad (uppermost up to 20 mm), flat, firm, glabrous, scabrid to scabrous especially upwards, the thickened whitish margins scabrid to spinulose, the mid-rib conspicuous, whitish, striate and flat above, rounded and rather less conspicuous on the back, up to 3 mm wide at the base, the primary nerves up to 9 on each side and together with the close secondary nerves rather prominent.

Panicle more or less erect, 20–50 cm long, the main axis triquetrous with a flat or convex, smooth or scabrid back, up to 2.5 mm wide, hispidulous or glabrous except at the scabrous angles, usually with nodal setae; branches many, distant or crowded alternate or verticillate, sub-erect, up to 15 cm or more long, often forming stout, dense, 2–4-ranked, simple, secund, false spikes, the lower sometimes devoid of spikelets in the lower half and the short secondary branchlets sometimes remote, the rhachis scabrid about 1 mm wide, setose and villosulous or pubescent only close to the base; pedicels mostly binate, very short, rarely up to 2 mm long, scabrous, discoid at the apices. Spikelets loosely crowded, ovate-oblong, 3.5–4 mm long (excluding the awn if any), mostly pale green, rarely purplish. Glumes membranous-herbaceous, finely puberulous or sometimes glabrous between the shortly spinulose nerves, the rigid spinules of the nerves up to 0.4 mm long, often much shorter. Lower glume broadly angulate-ovate, often ciliate, one third to one half as long as the spikelet, 3–5-nerved, constricted at the base into a short stipe so that the spikelet is narrowly truncate at the base. Upper glume corresponding in outline to the spikelet, convex on the back, caudate-acuminate, 5–9-nerved. Lower floret staminate; lemma similar to the upper glume but flat or depressed on the back, 7-nerved, cuspidate, or often produced into a scabrid awn up to 15 mm long, especially at end of branches and branchlets; palea hyaline, oblong, almost as long as the lemma, with finely scabrous to smooth keels. Upper floret hermaphrodite, broadly elliptical, mucronate-acuminate, about 3.5 mm long, straw-coloured, smooth and shining; lemma crustaceous, with a short scabrous tip, minutely scabrous around the base of the tip; palea similar to the lemma in texture. Anthers mostly 2.0–2.6 mm long, orange-yellow to purplish-brown. Grain oval-oblong, 2–2.5 mm long, about 1.6 mm broad, the embryo about two-thirds as long and rather narrow.

Named on account of its extraordinary stature and in honour of Dr Joyce W. Vickery for her outstanding studies on the taxonomy of grasses in Australia, especially in New South Wales, and with whom I had the privilege of examining *Echinochloa* from all over the world.

DISTRIBUTION: Along river systems in East Sepik, Western and Central Provinces of Papua New Guinea and in north east West Irian, often forming dense stands in flooded grasslands and swamps. Known only from New Guinea.

SPECIMENS EXAMINED: PAPUA NEW GUINEA: **East Sepik Province:** Sepik River, Timbunke, Wewak-Angoram area, flooded grassland, *R. G. Robbins 2488*, 9.1959 (CANB); Nauiemba canoe-channel, c. 4 miles [6.4 km] SE of Timbunke, Angoram Sub-province, edge of canal through extensive swampy grassland, alt. 100 ft [33 m] *R. Pullen 1702*, 9.1959 (CANB 70887, 70888, 70889); from Korogo village on Sepik River to Nambi village, Wewak-Angoram area, levee of Sepik, grassland flooded in wet season, *R. G. Robbins 2427*, 9.1959 (CANB); Aibom Barat, Angoram Sub-province (4° 05′ S, 144° 05′ E), swamp, tall grass 12 ft [3.6 m] tall, *A. N. Millar NGF 37538*, 5.1959 (CANB); along Tiyangaram (Black River) S of Ambunti, common in floating grass swamp, alt. c. 150 ft [45 m], local name Kamba (Waskuk), *R. D. Hoogland & L. A. Craven 10.342*, 6.1966 (CANB). **Western Province:** Fly River c. 30 miles [48 km] below Everill Junction, forms pure stands along river banks in water over a fathom [1.8 m] in depth, *L. J. Brass 6585*, 5.1936 (BRI, GH, US); Boset Lagoon, middle Fly River, lagoon margin, long-stemmed floating grass forming an extensive area at edges of open water (7° 15′ S) alt. 20 ft [6 m], *R. Pullen 7380*, 9.1967 (CANB 174865, 174866); Pangoa Airstrip, Lake Murray, Morehead Sub-province (8° 05′ S, 141° 15′ E) alt. 200 ft [60 m], grass in 6 ft [1.8 m] water, *A. N. Millar NGF35413*, 3.1968 (CANB); side of Aramia River, 40 km WNW Balimo Sub-province, alt. 75 ft [22.5 m], frequently flooded swampy sedge grassland, *K. Paijmans 1456*, 5.1972 (CANB). WEST IRIAN (IRIAN JAYA): Bernhard Camp, Idenburg (Taritatu) River, filling deep marshes and lining banks of lagoons on the river plains, rooting on the bottom and floating in dense masses, stems at least 15 m in length, alt. 50 m, *L. J. Brass 13785*, 4.1939 (BO, BRI, BH, US).

Other stout perennial species of *Echinochloa* growing in water, and with prominent ligular cilia, include the American species *E. polystachya* (H.B.K.) Hitchc. and *E. polystachya* var. *spectabilis* (Nees) Martinez Crovetto, and forms of the two African species *E. stagnina* and *E. pyramidalis* (Lamk.) Hitchc. et Chase.

In *E. polystachya* the spikelets are obovate and much longer (up to 7 mm) than in *E. praestans*; in *E. stagnina* the spikelets are elliptical, with a long, acute first glume and strongly echinate with bristles 1 mm long; in *E. pyramidalis* the spikelets

are never awned, smaller than in *E. praestans* and almost glabrous or very finely puberulous. In the American and African species and in the Asian *E. picta*, which is of much shorter stature, scattered setae occur throughout the whole length of the rhachises of the branches of the inflorescence. In *E. picta*, ligular cilia are often poorly developed in the uppermost leaves which are much narrower than those of *E. praestans*. Spikelets are usually narrower and the bristles are much less prominent in *E. praestans* than in *E. picta* which is less dependent on permanent water than *E. stagnina* and *E. praestans*.

REFERENCE

Reeder, J. R. (1948). The Gramineae—Panicoideae of New Guinea. J. Arnold Arbor. 29: 257–392

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